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The Official Journal of the Rocks and Minerals Association

Chips from the Quarry

PETER ZODAC

WATER

Water is one of the most common of minerals. It is found everywhere and anywhere, in fact it is even brought into one's home through iron pipes which convey it from some local reservoir. An important use for water is in the quenching of thirst. It is also used in cooking, in extinguishing fires, in filling deep depressions which often extend for miles, for floating boats. Still another use is for washing and bathing the body. Some collectors have discovered that washing the ordinary minerals in water improves their appearance greatly.

Minerals in general, like human beings, get dirty and need to have their faces washed. But minerals are helpless substances. If they become coated with mud or dirt, they cannot clean themselves—some one must do this for them. Consequently, if some kind hearted collector, into whose hands they may fall, would bathe them in warm water, often using a soap and brush, the minerals would prove so grateful that they would sparkle with brilliance and luster.

Many amateur mineral collectors do not deserve to possess good specimens because of their ignorance or carelessness in caring for them. They cannot or will not see that a mineral can become dirty, like a human being, and must be washed to have its appearance improved. Often such individuals, on being noticed at localities collecting dirty specimens, would be admonished to wash the specimens when they reached home.

The look of astonishment, bewilderment and often anger that would come over their faces is amazing. "What! wash minerals! We never heard of such a thing," they would blurt out. And they would deliberately turn their backs on you and walk away.

Yes, water is one of the most common of minerals. It has many uses, one of which is in the washing of minerals to improve their appearance. This is why the minerals in many good collections are fresh-looking, lustrous, brilliant and sparkling. Specimens in collections where no water has been used are dirty, unkempt and poor.

Amateur mineral collectors, if you make a practice of collecting specimens at localities, or if you acquire specimens from any other source, examine them and if they are in any way dirty, wash them in water and observe how much you have improved their appearance. Do not tolerate dirty specimens.

Peter Zodac

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MINERAL COLLECTING IN GUATEMALA

By RICHMOND E. MYERS

During August of 1938 it was my good fortune to be able to spend some time in the delightful Central American republic of Guatemala. Only a five days voyage from Philadelphia, this small country offers the visitor not only a varied combination of geographic environments, but also an interesting corner of the world for geological and mineralogical exploration.

My visit was primarily for pleasure and relaxation, but neither would have been possible without a hammer and collecting bag, and it is my purpose in this brief article to pass along some information relative to Guatemalan minerals and localities, for any person who may follow me, in quest of relaxation and specimens.

For the benefit of those whose geography might be a bit rusty; Guatemala is the republic directly south of Mexico, occupying most of the northwestern highlands of Central America, which pass westward into the Mexican state of Chiapas, and enter the republic from Honduras to the east. Except for a narrow coastal plain on the Pacific side, and the low lands of Petan to the north, which grade into Yucatan and the back country of British Honduras, the country is almost entirely mountainous. Two ranges cross Guatemala in a southeast to northwest direction, the northern range consisting of folded, uplifted, and much faulted sedimentaries, and the southern range parallel to the Pacific coastal plain, made up of younger volcanic rocks lying on the older basement. This range supports active volcanoes, several being above 12,000 ft. in altitude.

Much of this area is covered with tropical rain forest, but altitude offsets a great deal of the normal discomfort associated with the tropics. With the exception of the coastal regions, the country is quite suitable to the ordinary procedures of everyday existence as we know them, so with the possible discouragement offered by rainy seasons there is no reason why the climate should hinder the work of the northern geologist or mineralogist, provided efforts are confined to the highland areas where most of the white population lives. Altitude may take its toll from energy, for the highlands place you on the average about a mile above sea level, but go easy, and it will prove no drawback.

Two disadvantages should be mentioned. The first is lack of transportation facilities off the main highways. Guatemala City (the capital) is connected with both oceans as well as with Mexico and Salvador, by ex-

cellent rail service. A few highways penetrate into the northern highlands from there, but other than these mentioned routes, the best expedient is the air route, which is being used to its capacity. Mineral localities have a habit of tucking themselves away in remote places with no respect for collectors, prospectors, and geologists, and the biggest difficulty in Guatemalan collecting is getting to the places where the minerals are to be found. The other difficulty is the vegetation which is universally a cover. Tropical rain forest is luxuriant, and quickly covers old mine dumps, exposures, prospect holes, and all likely places to find specimens.

Now, what minerals may one expect to find here, and where? At present only two minerals are being mined in Guatemala. These are in the order of their importance, gold and lead. The former is dredged at Las Quebradas on the Motagua River, a short distance from the town of Morales on the main line of the railroad connecting Puerto Barrios (the Caribbean port where you land) and Guatemala City. This is by far the most accessible of the mining regions. To visit it permits must be obtained from the "Direccion General de Mineria, Hidrocarburos, Industrial Fabriles Y Comercio" or in other words the Bureau of Mines. This office is located in Guatemala City.

Besides gold, silver and platinum are dredged here in a small way. Production figures (most recent available) are as follows: 1932, 10,332 fine ounces of gold from 1,565,374 cubic yards of gravel. The government places an arbitrary figure of $17.00 profit on each ounce, the bulk of this production having been exported.

The principal lead mines working today are in the province of Huehuetenango, and are very difficult to reach because of lack of roads and transportation facilities. The ores are chiefly galena with some cerussite, and are associated with the zinc mineral sphalerite. The mining is done by the Indians, and the lead produced is entirely used in local consumption. Galena is the pay ore, all else being thrown aside.

These are the only two actively producing mining districts known today. There is however one unknown district that is actively producing native mercury. Where the mines are, no one but the Indians know. Their secret is well guarded, and nobody seems interested in prying into the matter. A small supply of native mercury arrives in Guatemala City at regular intervals, as it has done for many years. Brought by Indians and sold to local apothecaries, it should be listed as one of the mineral products of the nation. In the vicinity of Lake Atitlan, cinnabar has been observed which lends support to the occurrence of the metal further north. The Indians (descendants of the ancient Mayans) keep their secret well, and in fact, there is no need for the white man to learn it, for the mercury continues to seep into the market and supply his needs without his having to "go and dig for it."

So much for producers of the present. How about those of the past or future? There are many places in the Republic where abandoned mines, or unworked mineral deposits exist. All suffer from their remote position with respect to arteries of commerce, and that has been the chief factor in either closing them down or preventing initial exploitation. These localities may be visited by any one interested, but when it comes to hauling ore away

the cost would be prohibitive. For example:

Shortly after the World War until about 1931, an American company mined chromite from serpentines (similar to the Lancaster Co., Pa. barrens) situated near the railroad and close to the Salvador frontier. Prices obtainable for the chrome however were so low that in the last year or so the mine was operated at a distinct loss. Finally they stored what they had above ground at Puerto Barrios to wait for better prices, and closed the mine. So much for commercial efforts.

As to other metallics; in the vicinity of Copan there are possibilities that some day a great mining region may develop. If ores of heavy metals could be brought out at a low cost this remote area would probably become well known to the economic geologist. Copan lies over the mountains to the north, and can be reached in a little over an hour from Guatemala City—flying. Several days would be required by the only other route, auto and then horseback. Copan could market its products more easily via Mexico and her gulf ports, but that would mean crossing an international frontier, a thing to be avoided in Central America as far as shipments are concerned, if you desire to make a profit in your transaction. What minerals are found here? To begin with there is iron. The deposits are hematite and associated with them are workable beds of pyrolusite and psilomelane. On the other side of the town, within a half hour of the iron-manganese area, is a copper region, with chalcopyrite as the chief ore, and quite a few of the copper minerals such as malachite and azurite "on the side".

As one would naturally expect, a volcanic region should produce sulfur, and sulfides. In the vicinity of Antigua, much sulfur can be seen and smelt in road cuts thru recent volcanic extrusions. On the slopes of Agua one may find bombs encrusted with sulfur, and in a number of places sulfur crystals intermixed with calcites. Pyrite is fairly common, both massive and in cubes.

Not far from the Indian village of Chichicastenango, in a deep valley are springs of radium-bearing waters, and not far from here are some beautiful agate formations with onyx and travertine, well worth traveling to Guatemala to see.

The traveler in this part of the country will be shown many jade ornaments, beads, ring-stones (en cabachon), small idols, etc. These are relics of the old Mayan civilization. The jade is all reputed to have come from Guatemala, but the only "native jade" I saw in the rough was serpentine. A priest, one Father Rossbach, has spent many years collecting jade, and his collection is worthy of gracing any of the world's famous museums, yet a great deal of his Guatemalan ornaments are really serpentine. Where the genuine jade comes from is somewhat of a mystery. Archaeologists are inclined to call it oriental, and use it to prove a connection between the orient and the ancient civilizations of Central America. The Bureau of Mines knows of no actual jade deposit in Guatemala, either Jadeite or Nephrite, both being represented in the good Father's collection. If he knows anything about it, he is silent on the subject. The fact remains, there is ample jade in the museums and the ruins of the ancient Mayans. As to the serpentine, deposits are fairly common and continuous along the northern slope of

the northern range. It is quite likely that much of this was worked for jade by Indians in the past, and today much of it is sold to tourists as jade by Indian boys and girls, who quarry and cut it to resemble relics.

Another mineral used much by the Indians in constructing tools and formerly weapons is obsidian. In the volcanic regions, one would expect to find it, and one does. The railway from Puerto Barrios to Guatemala City cuts thru several obsidian ridges about twenty miles east of the capital. If you can convince the conductor to stop the train for a few minutes, you can pick up all you want for even the ballast on the roadbed is composed of the glistening volcanic glass.

Guatemala has produced some gems in the past, it may still do so in the future. Unfortunately nature has not endowed this country with great gem fields. The small size would eliminate the difficulties of transportation, and even warrant the use of an airplane. Opals have been brought down from the mountains at intervals by the Indians, but mostly the variety opalite. One region not far from Chichi was said to have produced sapphires in the colonial days, but nothing definite can be learned about its location. The "sapphires" may well have been amethyst, for quartz crystals grading into purple are not uncommon. One from that vicinity, as large as a man's head and almost pure crystal, is on exhibit in the Bureau of Mines.

Gypsum is another mineral found in this region near Chichicastenango, but northward in a wilder country. Attempts have been made to work the deposits, for good highways lead as far north as Chichi, but without success. The same old story—poor transportation even here. It might be interesting to describe the chief transportation method and appreciation of the problems it creates will become all the more evident. Everything is carried on the human back. The Indians, men, women, and children, all carry enormous loads strapped around their foreheads for support. A normal load will weigh well over a hundred pounds, and it is carried for many miles—running, not walking. How effective such a means of transporting bulk minerals would be, I leave to the reader's judgment.

There are possibilities for development in Guatemala, but looking at the picture aside from a commercial viewpoint, there are possibilities for research both geologically and mineralogically. Here is a region not pawed over by generations of collectors (save gold hunters). It is easily reached, and not frightfully expensive. In fact a plane carrying seven passengers can be chartered to take one from Guatemala City to Copan for about $75.00, not bad when divided among seven people. In a short time you will be able to drive there, for when the new highway is opened south of Mexico City, it will be a continuous road from Laredo, Texas, to Guatemala City. The Guatemalan section north to the Mexican border is finished now. Perhaps I have given you something to dream about, perhaps not, but at any rate it is my firm intention to return to Guatemala with ample time, and really discover what that country has in store for the mineralogist.

Judging by the number of books on minerals in the average mineral collector's library the average mineral collector cannot read English, nor any other language.

GEOLOGY OF FIELD TRIP TO SAN FERNANDO VALLEY AND PACOIMA CANYON, CALIFORNIA

By NICHOLAS A. D'ARCY, JR.

As all field trips must have a starting point, I am going to choose the individual homes of the members as the starting point of this trip. Our Hollywood friends will start up the alluvial wash to the foot of Cahuenga Pass. The pass is formed by a combination of natural forces working together, or is it against each other. We have a barrier of very resistant basaltic rock broken only at the foot of the pass, and a fault cutting the Miocene sandstone to give the water a chance to form a course along a weakened plane, thus faciliating erosion.

The natural route for many Los Angeles members would be to skirt Elysian Park and follow the Los Angeles River. Here we have a fine example of the way water paves the way for the transportation of civilization. The railroads have taken advantages of the work of the oft joked about Los Angeles River to provide an easy way over the anticline of the Repetto Hills and Santa Monica Mountains. As we can see at one time the Upper Miocene shale and slate of Elysian Park and the Repetto Hills were joined only to have the combined work of the Arroyo Seco and the Los Angeles River carve a very nice passage way to the coastal plain.

Should Pasadena be our point of origin we would find the granite of the San Rafel Hills blocking our path were it not for the fact that the uplift building these hills caused a very convenient fault at the junction with the lower Miocene sandstone and gave our friend, the water, a chance to do its destructive work. Colorado Boulevard follows this fault.

The majority of the members should now be in San Fernando Valley where we see an entirely different action of the water. Before it had been doing destructive work for the benefit of man, but now it is found to be doing constructive work and still for his benefit. Before the water started its work we would probably have seen a broad valley with gently sloping sides. Rains of the ages have eroded the surrounding sedimentary rocks to the south and west and granites on the north till this trough is now filled to a depth of over 1000 feet with recent alluvial deposits. The depth of the underlying sedimentary formations is not known but runs into thousands of feet. It is interesting to note that this recent alluvial deposit is all nonmarine yet it extends to a depth of at least two hundred feet below the present sea level, proving that the valley has settled as the additional weight has been deposited on its surface.

It is also interesting to note two ways in which sedimentary hills may be formed. On the south we have a folding of the rocks probably formed by faulting of the igneous rocks underlying them. On the north we find the igneous rocks forcing their way up thru the sedimentary and dragging the adjacent rock with it. Thus on the north we have the older rocks outcropping on the heights and on the south the younger rocks appear on top.

At a rock crusher we had a fine chance to see the exposed strata and note the lack of uniformity of the de-

posits which was caused by years of drought and flood. It was also possible to note where old channels had been at various times and this illustrated the fact that the Los Angeles River has never known a single channel but cuts a new one every time it sees fit, often much to the embarrassment of the neighboring farmers. Instances were cited when the river cut a new channel in a single day over 50 feet deep and several miles wide, only to refill it the next day. It is possible for this to happen due to the very steep gradient of the river bed, being 40 to 50 feet per mile in the San Fernando Valley, in contrast with 8 to 10 inches per mile for the lower Mississippi Valley. The Colorado River has only an average gradient of 7.75 feet per mile, and it was able to cut the Grand Canyon.

From the rock crusher we wound our way to Pop's Willow Lake where we found the water rising in springs to form a lake at the surface. Only a few miles below we saw dry sands to a depth of about 200 feet. The water from the mountains emerges into the fan of the Tujunga wash and sinks in the manner characteristic of many western rivers. It then percolates thru the loose gravels toward the sea but is dammed by a dike of granite or other non-porous rock and forms an underground lake which overflows into an old gravel pit to form Pop's Willow Lake.

From there we traveled to the selenite deposit which in addition to providing exercise for some and fine specimens for others was a geological blackboard. Here was a fine example of the way sedimentary rocks fold to form anticlines and synclines and how they shorten in length rather than fracture or fault as the igneous rocks do when under pressure.

From the selenite locality to Sunland Park and thence to the mouth of the Little Tujunga, was all recent alluvial deposit with the exception of the short distance thru Miocene shale of the same period as the rock in which we found our selenite.

We then turned up into the mountains and passed thru the Miocene shales and successively older rocks till finally, at an elevation of about 1800 feet, we passed into the igneous rocks and crossed one of the major faults of the San Gabriel Mountains. From there to the mine in Pacoima Canyon we passed thru granite, often intruded by dikes and veins. At the mine itself we found some splendid examples of metamorphism showing how the heat of the more recent intrusions alter the surrounding rocks.

After loading our cars so heavily that we had to push them most of the way up the grade, some of us decided to come home thru La Cresenta and found that the Big Tujunga River had not always flowed west when it came down from the mountains but had probably at one time flowed east thru La Cresenta and Glendale. The action of a powerful stream was needed to cut the notch, whose base now serves as a highway between the two above towns. As the granite of the San Rafel Hills and Verdugo Mountains is a resistant rock, it is probable that the Big Tujunga River in time of flood overflowed at the location of the present wash and finding comparatively easy cutting in the Miocene shale soon cut a new outlet at the location of the present wash. This is a reversal of the usual form of river piracy as this time the river took a longer route to the ocean.

SPECIMENS FROM FIELD TRIP TO SAN FERNANDO VALLEY AND PACOIMA CANYON, CALIFORNIA

GYPSUM $CaSO_4.2H_2O$
VARIETY SELENITE

LOCATION: In folded sedimentary rocks just south of Foothill Blvd. on side road turning off directly east of Big Tunjunga Wash.

HISTORY: Was named "selenite" by the Greeks because the light transmitted thru the crystals reminded them of moon-light. It was used as a building material by the Egyptians and by the wealthy Greeks as windows in their palaces.

FORMATION: Gypsum is easily formed by the action of sulphated water on limestone or by the evaporation of inland seas containing lime sulphate water.

USES: Primary: Cement retarder, fertilizer, paper filler, flux, sulphuric acid. Manufactured: Plaster (wall, dental, surgical, molding), wall boards, tile, pipe covering (with asbestos).

SIDERITE $FeCO_3$

LOCATION: Pacoima Canyon in dike at old mine. This specimen is interesting in that it contains siderite ($FeCO_3$) (brown), pyrrhotite ($Fe_{11}S_{12}$) (bronze spots) as primary minerals; and limonite ($2Fe_2O_3.3H_2O$) (rusty) as a secondary mineral. All three minerals become magnetic upon heating. Limonite is the only important iron ore represented.

It will be noted that the siderite has solidified after the quartz. This gave the quartz a chance to crystallize within the siderite. The usual procedure is for the quartz to crystallize around other minerals, for example rutile and tourmaline. This indicates that the siderite has a lower melting point than the quartz.

ANNABERGITE $Ni_3As_2O_8.8H_2O$
LIMONITE $2Fe_2O_3.3H_2O$

LOCATION: Adjacent to siderite dike at old mine in Pacoima Canyon. Annabergite (nickel bloom) forms as a coating on rocks due to the oxidization of other nickel salts. In itself it is not of commercial value. It is an incrustation which may lead to deposits of other nickel minerals. The limonite is another indication that this rock has been altered. The exposed surface shows evidence of weathering where the less resistant minerals have been removed leaving the quartz in relief. The two smooth and roughly parallel surfaces of this rock show evidence of being fault contacts. This would provide an avenue for surface waters, allowing them to deposit the annabergite and alter the iron ore to limonite.

METAMORPHIC ROCK

LOCATION: Adjacent to siderite dike at old mine in Pacoima Canyon. This rock serves to show the three main agents of metamorphism. (1) Earth movement is indicated by the smooth surfaces on, let us say, the bottom. It is evident that this is a fault surface. (2) The rock has been subjected to intense heat as shown by the burned appearance of the top and the crystallization of the quartz in the center seam. (3) Water and included gases have altered the material surrounding the quartz in the center seam.

It will be noted that the earthy material in the center seam is limonite and that the quartz crystals are very similar to those in the siderite specimens. This would indicate that at one time a seam of siderite with included quartz crystals had occupied the center of the rock. It is now metamorphosed to the present limonite.

SMOKY QUARTZ AND AMAZONSTONE AT PINE CREEK, COLO.

By C. W. REITSCH

A great deal has been written on the Devil's Head locality in central Colorado. Reports of large quantities of topaz have appeared. The writer and Mr. V. H. Cato in looking for topaz in this locality have uncovered a number of old prospect holes on Pine creek that have yielded interesting specimens of smoky quartz and amazonstone.

It would be very difficult to give an accurate description of this specific locality so it will not be attempted. The slopes are precipitous and densely forested. One prospect hole which we thought we had definitely "spotted" could not be found on two subsequent trips. We are still looking for the place where the original find was made. Mr. Cato has several crystals of very good color from this original spot, but we have so far been unable to locate it.

Almost all traces of the original vein are obliterated by forest growth. However, it is quite readily traced by the series of prospect holes. The dumps are greatly weathered and in many cases almost covered by vegetation, indicating they are of considerable age. Some of these dumps contain nice specimens of amazonstone. Others contain nice crystals of clear and smoky quartz, and still others contain both. Several nice smoky crystals have been found loose on the slopes and so far, we have been unable to find their origin. Some of the quartz crystals are quite large, running 10 to 12 inches in length and 5 or 6 inches in diameter. One dump in particular yielded very large crystals and crystal groups. This hole was cleaned out and dug in further. The rock is chiefly feldspar—probably principally microcline. A number of nearly complete feldspar crystals have been obtained. In places the feldspar has broken off in quite regular shapes and gives the appearance of molds of various crystals. The feldspar is usually stained a chocolate brown in fractures, and crumbles readily.

In the hole that was cleaned out, one very nice doubly terminated crystal was found. It was found in place in the feldspar and required considerable patience for its removal. The crystal was large and fractured in two places. These were old fractures as they were stained the characteristic chocolate brown. A number of smaller crystals and crystal fragments were found of a very good color. In this hole also masses of fluorite were found and a few cubic fluorite crystals. All the material was imbedded firmly in the feldspar. All undoubtedly topaz associates—but no topaz.

The quartz are nearly all warped and distorted. They too are stained the characteristic chocolate brown. One crystal was obtained about 4 inches long and 3 inches wide by ½ inch thick, having one complete termination. In this one particular pocket, the crystals were all highly flattened. On another dump there were very few single crystals and most of the material were complexly twinned masses. Feldspar masses coated with short, stubby terminated crystals are common. Most of the larger crystals are not uniformly of smoky material. Half the crystal may be gemmy smoky material of various

shades which gradually merges into a material having minute bubbles and then into milky material which is very possibly produced by myriads of these bubbles. Some of the smaller crystals may be grown onto feldspar crystals. One very nice terminated crystal was obtained with a partial feldspar crystal grown into its base.

The amazonstone is perhaps the most interesting. Much of the microcline is crystallized and shows good terminations. One complete, doubly terminated crystal about one inch in length was found. Most of the microcline is of a cream to flesh color. On some dumps the material with the characteristic amazonstone color was found. Some of the material was of a light green in color, and some ran to very dark shades. A number of the crystals obtained had one complete termination. A large number of cleavage crystal sections were found. Some of them were very interesting in that they were nearly a crystal cross-section, and the color was not uniform. Some of these sections showed a band of color on the outside of the crystal of a deep green color which was not over 1/8 inch thick and shaded into the flesh colored material in the interior of the crystal. Some of these sections were from crystals 2 to 3 inches in diameter. On some of the other dumps the material was of uniform color throughout the crystal. Some of the amazonstone is suitable for cutting, although a lot of it shows too definite a cleavage for this purpose. This appears to be due to the fact that it has weathered for a long period. Possibly material could be obtained beneath the surface which would be good gem material.

Gem quality smoky quartz is more readily obtained here. The smaller crystals and fragments are of the better quality, although often half of one of the large crystals is gem material. The very dark colored material is not the general rule, and much of it is only slightly colored or even water clear.

There is no doubt that there is topaz in this section somewhere since it has been found at Devil's Head, which is not far away. However, our work at this particular locality indicates that it is rather vague hope for this place. There are compensations, however, since good specimens of both smoky quartz and amazonstone are rather readily obtainable.

LOST QUARRY

Palermo crater hidden in the hills
And almost lost to man, its ancient road
Deserted now and overgrown with trees,
Young pines and maples higher than our heads
And at the entrance trailing blackberry vines
With angry torturing thorns to tear and wound
The questing visitor who ventures there.
Palermo, a great chasm in the earth
Whose crystals have been riven from their bed,
Whose fragments strew the ground,—whose rocky walls
Stand robbed of all their ancient mineral lure,
Forsaken quarry, in whose cavern black
A floor of unseen water echoes back
The hollow voice of any falling stone.

D. HOPKINS,

(Palermo quarry, Groton, New Hampshire)

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stones?

Are you collecting minerals or

THE MAINE PEGMATITE BELT

By PHILIP MORRILL

There are few, if any, more interesting spots to the mineral collector than the pegmatite belt which runs across southwest Maine. A strip twenty miles wide is not only highly mineralized but the great majority of non-metallic minerals have been found in this section.

This spot is easily accessible to collectors residing in New England and, if a week-end is available, it makes a nice trip even from New York and Pennsylvania. Dealers serve a fine purpose but the real thrill of this collecting game comes from the perfect specimen picked up by oneself.

Starting just over the New Hampshire line we have North Baldface Mountain where quite a lot of white topaz and some amethyst has been mined. Crossing the Maine border we come first to what might be called the amethyst section.

Deer Hill, in Stowe, has long been famous for its vein of amethystine quartz which is exposed for over a quarter of a mile. To reach this one must drive to Stowe from Fryeburg and at the village turn right and follow the road which in the next couple of miles crosses and recrosses the state line. At the river, bear right again onto a little dirt road which crosses the river over a little bridge and then up to a farm, now unoccupied. Car must be left here and the hill climbed on foot. There is a lot of amethystine quartz here but to my knowledge no real gems have been found.

Around Fryeburg a number of beautiful amethysts have been found. One cut a beautiful 38 carat gem and was so fine as to be purchased by the cutter in Philadelphia. Another time a local man found a ledge crossing a highway and a short time later when the road crew were to blast there, he was on the spot and secured a fine gem.

Mt. Pleasant, in Bridgton, has produced some of the finest amethyst in the world. Some are on exhibition at the Natural History Museum in Boston.

Following Route 5 north from here, one comes into East Stoneham. Stoneham has produced some very fine gems in topaz and aquamarines. A few years ago at different times and at different spots on Sugar Hill, two farmers picked up beautiful aquamarines. One of these cut a 133 carat stone, which Dr. Geo. F. Kunz stated was the finest aquamarine ever found in America, as well as 300 carats of smaller stones. Dr. Kunz has written some articles on the topaz from this town. There are a number of quarries in this town and two new ones were opened recently. Golden Beryl of gem quality is also found here.

Continuing on Route 5 one passes directly by the Bumpus Mines in Albany, the dumps running down to the edge of the road. This mine has been described many times because of its enormous beryls. A new crystal was exposed about two years ago which is probably the largest in existance. These mines are well worth a visit. The colors are amazing as one end of the mine is solid rose quartz while in other parts perfect hexagonal cross-sections of green beryl are seen in white feldspar. Visitors, however, are not permitted to carry off samples from this locality.

Continuing along Route 5 through Newry and Hanover, one swings north and leaves the river. A couple

miles from here, going toward Andover, one will see a small crusher on the left of the road (Route 5). If the car is parked here one may follow the trail on foot up to the top of Plumbago Mt. where Newry Mine is located. It is about a mile walk and a climb of about a thousand feet. An ordinary person will have no trouble but it is not to be taken by a very old person or one who is an invalid. The first pit reached is being worked and is not open to the public. Here is being mined the triplite now available at several mineral dealers advertising in ROCKS AND MINERALS. Farther up, two or three hundred yards, passing a log cabin where the mine operators live, one comes to a small dump on the left. Here one may find greenish-blue tourmaline but farther on is the main quarry which has produced over 100 different minerals. For some time pollucite was mined here for its caesium content. The last two quarries mentioned are open to the public. Minerals from the mine are loaded onto a skid and dragged down the mountain by tractor. Somewhere west of this mine is the borderline between the fluorine pegmatites of western Oxford County and the lithia pegmatites as found here and on through to Auburn.

Black Mt., Rumford, which is only a little way from Plumbago Mt., is well worth the climb as in all direction there are mineral outcrops. In fact all of Rumford is well worth prospecting.

One can cross the river and follow Route 120 (rather rough) to Bryants Pond and then to West Paris. A short distance from West Paris is the Perham Quarry. It is interesting to know this large quarry was made by only two men. Following south on Route 26 one passes a small quarry on the left side of the road where a few minerals may be found.

Just before reaching South Paris village, at the overnight camps bear left to Paris Hill and then right for Mt. Mica.

This historic mine is worth a visit although the dumps are quite well worked over. Be sure to pass the first pit where the light colored feldspar shows up over the top to the real Mt. Mica mines. I have often thought that if one could spend several days on these dumps and dig a real hole down into them with a device to wash the earth from the minerals one would be richly rewarded. A few minerals may be found on the surface of the dumps but they have been too well worked over in comparison with the newer mines. For complete history of this mine see Hamlin's, "History of Mt. Mica".

If one continues over the road to Mt. Mica he will pass in a few miles the Bennet Quarry in Buckfield but the road is very rough and hilly. This quarry in operation now by Mrs. Bennet and her sons. Good specimens may be obtained.

If one returns from Mt. Mica to South Paris, Norway is only a mile away and then Greenwood with its chrysoberyl and Manganapatite.

From Buckfield one can easily pass to Mt. Rubellite, about two miles north of Hebron village. Beyond Hebron is Mt. Apatite, also well known. This quarry is too well worked out to be of much interest.

Across the river is the Berry Quarry in Poland. In 1910 one of the largest finds of tourmaline ever recorded, of 13,000 carats, was made here. An interesting tale of this section relates a farmer, seeing large amounts of black tourmaline exposed, took a cart

load of it to Mechanics Falls and sold it for coal.

Nineteen miles from Lewiston on Route 196 brings one to Brunswick. North of this town is a string of quarries well written up in an early issue of ROCKS AND MINERALS. I have often wondered why more collectors have not visited this section as it is just off U.S. Route 1 and within reach of all the Atlantic seaboard. A new quarry is being opened near Richmond north of any of the present workings.

A few miles northwest is Litchfield where Litchfieldite occurs.

South of Brunswick is Phippsburg and about a mile north of Small Point in this town is Mt. Arat where in an old mine may be found fine yellow garnets (manganese).

There are two interesting trips that may be made from this section. The first to Damariscotta to the shell heaps. These, about 45,000,000 cu. yds., were left by the Indians and contain many relics. The other trip is way over east through the metallic belt. Here is found silver, lead, tin, bismuth and what is called the largest known mass of molybdenum ore.

In general, before going to this section, it is well to get U.S. Topographic Maps. They only cost a dime apiece and 40% less in lots of fifty. Write the U.S. Geological Survey at Washington for free Index Map of state you are interested in. This map will be divided into sections of Topographical Maps and then you can mail money and list of maps desired. The same office issues a map of a 1906 survey giving all the mineral outcrops of Maine. It sells for $2.50.

If you are not familiar with the woods do not leave your car and dash off without a compass as there are places where it is not funny to get lost. The state does not allow the building of open fires without a Registered Guide.

The main highways are in good shape except of course in winter when the snow may get deep. Beware of small country roads as I know nothing as nerve-wearing as a don't-know-where-it-goes road at three miles an hour in low. There are places where I drive fifty miles around by main highway to avoid twenty miles of road across.

Most any of the dumps of the quarries not being worked are open to the public. The average quarry operator is a fine fellow to get along with but don't abuse the privilege. An example of this was told by Mr. Bumpus of a lady who drove up and loaded about five hundred pounds of beryl into the back of her car and was going to drive off with it.

The quarries mentioned are only a small percent of the total. Any town in this district will have several of them and often the lesser known and least accessable will yield the best mineral specimens. One who has only been able to visit a few road quarries around the cities elsewhere gets an awful jolt at the wealth of material when he first sees these Maine feldspar quarries.

So next summer crank up the old jitney and come to Maine.

$500 CONTEST

Quebec Bureau of Mines offers $500 In Prizes to Authors of Best "Human Interest Story" of Early Development of Western Quebec.

There is still plenty of time for authors to enter the story competition announced last year by the Quebec Bureau of Mines. Entries must be in, on or before December 1st, 1939.

The rules of the competition are simple and easily followed.

The competition in English or French is open to all authors, and may be written individually or in collaboration. The history must contain at least 40,000 words and present a picture of the discovery, prospecting, and development of mining in "Western Quebec" from its inception to the present day. It must present authentic facts and give sources for reference; also names of the participants in this great work, together with the part each played, the hardships endured, and the final winning through to victory.

A jury of five will judge the merits of the works and if in their estimation they meet the requirement of the competition, two separate prizes of $500 each will be awarded, one for the French and one for the English.

Information relative to the competition may be had from Mr. Charles Bilodeau, Secretary of Competition, Department of Mines and Fisheries, Quebec, Canada.

World's Largest Jade

It is surprising how errors often persist in popping up—oftentimes they are inexcusable. For example, in the article "Nephrite and Jadeite in Washington", which appeared in the April, 1939, issue of ROCKS AND MINERALS, it was stated on page 114 that the largest mass of nephrite known was found by Dr. Geo. F. Kunz, at Jordansmuhl, Silesia, in April, 1899, and weighed 4704 lbs. (about 2¼ tons). This reference was taken from "The Curious Lore of Precious Stones", by Dr. Kunz, and may have been true at that time and we quoted it in good faith overlooking the fact that in the Jan., 1939, issue of ROCKS AND MINERALS, we printed an interesting article "Nephrite Boulders of the Peking Jade Trade", by C. N. Joyner. In this article Mr. Joyner states, on p. 19, that the largest mass of jade (nephrite) known is in the Forbidden City at Peking in the Lo Shou Tang, "Pavillion of Contented Longevity".

"This magnificent mass," says Mr. Joyner, "is roughly three feet square and over seven high. Goette estimates the weight to be at least seven tons. The writer, who has recently examined the specimen, feels that eight tones would be nearer the figure. Before the carving (which took ten years) the weight may easily have exceeded fifteen tons."

This forgetfulness on our part is quite inexcusable and we acknowledge our error and apologize to our very good friend from whose article we have just quoted.

FOSSIL SHELLS AT DAWSON, NEBR.

By MRS. ELMA LARIMORE

Dawson, Nebr.

Scientists tell us that many years ago parts of the United States were covered by sea water at several different times. It seems very difficult to believe that here in Nebraska, in the middle of the country, hundreds of miles from any large body of water, there could ever have been such an occurrence. Especially when one sees the many large farms where crops have been planted, cultivated, and harvested for many years and fine homes built.

But everyone probably knows what a veritable "bone yard" Nebraska is. This is a good proof that there were lush swampy growths here in the ancient past. That very wonderful skeletons of the Dinosaur and prehistoric Elephant and many other extinct animals have been found in this State. These, however, are found in the western part; very few fossil bones are found in the eastern part.

But we have our proof, too, that the eastern part of Nebraska was also under water. At Dawson, in the southeastern part of Richardson County, the Burlington Railroad right-of-way cuts through several hills. The cuts are perhaps twenty feet deep, and over all the exposed surfaces are to be found fossilized shells of various kinds and sizes. A large majority of them are broken, but on a recent visit when about an hour and a half was spent in search of them, I found 25 whole halves and 2 completely whole shells (having both halves joined in natural position). What sort of creatures used them I am not scientist enough to know. But I do find them most interesting and perhaps other people would also. Some of the shells are very odd, having sharp thorn-like points on the outside surface. The soil in the cuts is a yellow clay. About three feet down from the top of the hill there is a thin ledge of limestone. Shells are also found imbedded in this limestone.

Among the shells are often found Crinoid "beads"—the joints of the stems of the Crinoid or Sea Lily, which is related to our sea urchin of today.

A Member We Are Proud Of!

Washington, D. C.—I am renewing my subscription to ROCKS AND MINERALS for another year. I am now in my 81st year and have every number of the magazine as my original subscription began with the first issue.

ROCKS AND MINERALS has been a pleasure and an inspiration to me—an amateur collector—and I intend to continue taking it until either I or it dies.—Elra C. Palmer.

Finds Large Crystal

Danbury, Conn. July 28, 1939: Wilbur J. Elwell of this city found today at Tilly Foster one large group of three dolomite crystals of which the largest measured 4x4x5 inches—the largest dolomite crystal he ever saw from this famous old locality.

Who ever said that Tilly Foster was dead! We swear it isn't. John N. Trainer knows it isn't. Wilbur J. Elwell proves it isn't. "Nuff said!

SAPPHIRES IN NEW SOUTH WALES, AUSTRALIA

By P. ORMSBY LENNON

Courtesy of the Australian Government

A Sapphire Mine in Australia

In a report to the English Colonial Office, dated the 18th October, 1851, the late S. Stutchbury records the first discovery of sapphires in Australia.

Sapphires occur in several places throughout the Commonwealth amongst recent and Tertiary alluvial deposits, but the colour of the stones is usually such that they are of little commercial value.

At present, Australia's chief producing centre is in the Inverell district of New South Wales, where, since 1918, gems of good quality have been mined.

To the eastward of Inverel, in the district now known as Sapphire, the gems are found distributed over a wide area. From 1918 to 1927, the production was nearly 20,000 ounces, valued at over £28,000. Averaged out, this gives a yield of 28 shillings an ounce, but good blue specimens, weighing over a carat have fetched as much as £13 an ounce. Smaller stones may fetch anything from 15 shillings an ounce, upwards. But since the world depression the few miners left on the field have been feeling the effect of restricted buying and poorer

Courtesy of the Australian Government

Sorting Sapphires

prices. Only for these factors, production figures would be much higher. There is plenty of ground, yet untouched, in which sapphires are known to exist.

In the Sapphire district, the gems occur in recent alluvial deposits along creeks and gullies. These are mainly composed of black clayey material, through which are interspersed pebbles, boulders of basalt and other igneous rocks. Sediments and lavas of Carboniferous age, capped in places by Tertiary basaltic lavas, are the rocks principally occurring.

The wash-dirt averages from 2 feet to 4 feet in thickness, and may have an overburden of black clayey soil ranging from 2 feet to over 8 feet in depth. The wash itself chiefly consists of pebbles and boulders of basalt and felsite. This is treated by the miners in puddling machines, passed through several riddles or sieves, and the gems themselves are later culled out by hand-sieving.

Roughly speaking, about 20 per cent of the stones obtained are corundum, grey-green in colour, and of no market value. Many gems won have exceeded 40 carats in weight, and it has been estimated that about 10 per cent of all the marketable stones have weighed over 1 carat apiece.

Courtesy of the Australian Government

Sapphire Buyers' Camp, Anakie, Queensland, Australia

In the Museum of the N.S.W. Department of Mines, many sapphire specimens are on exhibition, amongst them being some pieces of weathered basalt containing sapphire crystals. These were found in beds of alluvial wash. So far, however, there is no record of sapphire being found locally amongst basalt formations *in situ*, although search has been made at various times.

Many of the gem-bearing creeks have cut their channels through basalt cappings into older Palaeozoic rocks, and here stones from ¼ to 1 carat in weight have been found by "specking" (following up "colour" indications) in tributary gullies.

Sometimes sapphires and fine water-worn material have been found in gullies within a few feet of basaltic flows, and many of the gems from these spots were in perfect crystal form, although some have had their angles rounded. Geologists are of the opinion that beds of alluvial material occur either at the base of the basalt or between two lava flows. In fact, occurrences of the latter sort are known to exist in places. Mr. E. C. Andrews of the N. S. W. Mines Department considers it likely that some of the gully sapphires have been shed from a tertiary lead either beneath or between the basalt flows. No prospecting, however, has taken place in the older gravels, and, at some future time, investigation here may result in payable values being yielded.

THE LOST PINE MINE

By MARK M. FOSTER

Many stories of mines found and lost in the heyday of the western gold rush are told by prospectors; some fact, some fiction. How very likely it would have been for the early western emigrant crossing the trackless expanse from eastern civilization to the new civilization in the west, to have found some valuable lode or deposit midway between the two civilizations but facing the setting sun as his goal, paused only long enough to set up markers, blaze a few trees—thinking he'd come back in the event fortune should fail to smile on him in the "Golden State."

Some such have been rediscovered. Others proved sophistications designed in the minds of cunning "highjackers" to serve as alibies to account for their sudden rise to fortune after robbery of a stage coach, pony express, etc. Still others are based on facts and no doubt there are yet mines which the discoverers marked and plotted to which they never have been able to return and their children know of them only through stories related by their parents. Probably accounts so lacking in detail only cause confusion to any one who attempts to rediscover such mines.

The writer has been on two expeditions in search of "lost diggings" in New Mexico. One was called A's lost diggings. After 35 days' search by burro pack train and much inquiry of persons likely to have known firsthand facts, he is now convinced, after several years research, that the mine was a sophistry, designed to conceal the fact that the originator of the story was searching for a lost cache of gold stolen from a U. S. mint in which robbery its author may have played an important role and which cache had been in the meanwhile, unknown to him, removed and appropriated by one of his confederates in the robbery.

The other expedition was in search of a standing chimney supposed to be somewhere in the Escondido Mountain of New Mexico or possibly in the Escudilla Mountain, of Arizona, of which the following story is told.

Some early day miners, returning east with their fortunes, were encamped in an old trapper's cabin. An alarm of approaching Indians was shouted by some vigilant member of the party whereupon the miners hastily pried up the hearthstone of the fireplace, dug a hole beneath it and buried their gold while waiting for the advance of the Indians. In the battle which followed, the Indians were victorious and all whites were slain except one man who was left stunned, supposedly dead. He, after an unknown period, came to, found the house burned, wagons burned, horses stolen, companions slain, and left for where he knew not.

At times in his flight he would swoon into unconsciousness, come to and go on again until he finally reached a Morman village where he told of the massacre. Whether weeks or days had transpired since the massacre he could not remember, could not even tell how he existed during his escape and the journey to the village. He lived to a ripe old age and was living at the time the writer went in search of his gold but he was never mentally balanced. The man himself went many times with friends in search

of the treasure but the standing chimney with the fortune beneath its hearth, as he thought he remembered it, is yet to be found.

During June, 1937, while collecting mineral specimens in Washoe County, Neveda, the writer met two fine old pioneer prospectors, made camp with them on their large group of cinnabar claims where they told him of markers to a lost mine near their camp. To you who have never been in the remote unsettled parts of western United States, let me diverge to say there are, in northern Nevada, many square miles of uninhabited territory, hardly explored. There are herds of as many as 1500 to 2000 antelopes galloping over its sage-brush, and it was in this wilderness that we were camped.

These prospectors advised the writer to go to Lake City, Modoc County, Calif., to get the story from the most authentic source, Mr. Melvern Jones, for the readers of ROCKS AND MINERALS. Before breaking camp, the two old men showed him a lone pine tree and a juniper tree at the foot of the hill below it. The largest limb of the juniper tree pointed toward the pine tree.

We went on to Cedarville, Calif., where we met Mr. Thomas Jones, a garage owner, who turned out to be a brother of Melvern's. Thinking he might be able to give the writer the story he asked him for it. But Mr. Jones replied that his brother Melvern, being his senior, could give me a better one. He further said, "I am going up beyond Lake City now to clear up a wreck. Jump in the car and I'll take you right to Mel's." The writer got a thrill out of Mr. Jones' wrecker as it was built on a 1913 model Dorris car which was still in splendid mechanical condition after 24 years of service. We soon reached Lake City, found Mr. Mel Jones at once who gladly told the following story.

A miner moving with pack horse from Poor Man's Diggings, Idaho stopped at a creek on Bald Mountain Nevada, (Washoe County) to recuperate from an illness that had seized him enroute to Los Angeles. When feeling a little better he decided to pan some gravel, shed from a crumbling yellow ledge nearby, and panned quite a large amount of nuggets ranging in size from a bird shot to a pea but as he was obliged to go on to Los Angeles he blazed a pine tree and a juniper tree and set up a series of monuments which he thought would enable him to return to his discovery.

He reached Los Angeles where he died at the home of a Mr. Butler, in 1872. When he realized that he was dying, he gave Mr. Butler a map to his diggings. The map showed a lone pine tree as an important witness (axe blazes on three sides) also a juniper tree near by with the same marks.

Shortly after the death of the miner, whose name Mr. Jones did not know, Mr. Butler and his wife made several trips to Bald Mountain, in 1872-73-74, inquiring each time from the few cowboys they chanced to meet if they knew of a lone pine tree in that region. All declared that in all their riding they had never seen a pine tree in that section.

A French ranchman named Massier (generally pronounced Macy) owned a ranch near Bald Mountain and he too was sure that no pine tree existed in that section.

In 1876, a man named Stanley came to Cedarville enroute to Bald Mountain to look for the Lost Pine Mine, as it was now being called. At Cedar-

ville he made the acquaintance of a Mr. Beebee who worked in a sawmill. Mr. Stanley was low on money and secured work at the mill to increase his grubstake. Mr. Stanley soon fell ill and when death was inevitable told Mr. Beebee the story of the Lost Pine Mine and gave him a map of the diggings, explained it to him, and died, 1876.

Mr. Beebee knew nothing about mining and cared less for it, so he in turn gave the map to Mr. Thomas Jones, Sr., the father of the two Jones already mentioned. The map by this time was so thumbed and worn that most of it was not legible and Mr. Beebee had forgotten much of what Mr. Stanley had told him about it. At any rate a lone pine tree with axe blazes on three sides was a very outstanding witness to the diggings. Mr. Jones made a search for it in 1877 in company with a French Basque, named Joe Contero. They too inquired of cowboys about the lone pine tree and were told by all that no pine tree was in that section. Mr. Massier said to Mr. Jones: "Tom, you'd better go back to your blacksmith shop; you are wasting your time for there is positively no pine tree in this part of the country."

Mr. Jones made three more searches in 1883-84-85. On the last trip he was successful in finding the lone pine tree with the axe marks exactly as described in the map. The juniper tree was also nearby but for lack of further details he did not know where to go from there. As his provisions had given out, he rode over to Mr. Massier's ranch for "grub" where he remained over the night. The next morning he asked Mr. Massier to take a ride with him. When they came abreast of the pine tree, Mr. Jones stopped and said: "Are you sure there is not a pine tree near here?"

"As sure as I'm alive," replied Mr. Massier.

Mr. Jones pointed to the "lone pine" on the hillside and asked: "What is that tree on the hillside?"

"Why, it's—a pine!" answered Mr. Massier in amazement. He was very much chagrinned too as he had passed the tree hundreds of times and had never observed it.

Further search revealed a series of monuments leading to the lone pine from the east. Mr. Jones tore down the monument nearest the tree to see if any further evidence could be found. In it was a home-made key made from a thin piece of steel which looked like the spring from the old spring-heel shoe. This was all. Mr. Jones never found the gold but he did unravel a part of the mystery. He found the "Lone Pine". If any one knowing the rest of the history reads this story, he will be spared much time searching for the lone pine tree.

The writer has seen the lone pine tree and has stood in spell-bound wonder before it wondering what fascinating story it could unfold if it only could talk! Such is the life of a prospector.

The writer has roamed across five counties in Nevada and in all his travels this lone pine tree and its tiny seedling children is the only pine tree he has seen.

The writer knows several more stories relative to lost mines and he might be induced to relate them if readers of ROCKS AND MINERALS desire him to. Just drop a card to the Editor if you want another one.

LETTERS FROM A MINERALOGIST TO HIS SON

By R. V. Anderson, Alhambra, Calif.

New Ideas in Fluorescence

EDITOR'S NOTE: *This is the first of a series of articles by Mr. Anderson addressed to his son and to the sons of other collectors who have probably asked the same questions on matters pertaining to mineralogy.*

My Dear Son—

I can readily understand your confusion as to sources of light for flourescent effects. When I started out to secure this information for you, all seemed in helpless confusion. Articles contradicted each other; many authorities did not agree on various points, and many claims seemed extravagant for lights and apparatus. There was no seeming relation between price and performance. I have tested all the sources of light listed below and have rated them on the basis of the volume of light given off and the ability of the source to fluoresce (Fls) all colors and all minerals. The results are my personal opinion from a mineralogist's point of view.

Before starting on the sources of light, there are a few fundamental facts that we should keep in mind.

Fluorescense is the ability of organic and inorganic substances to absorb invisible light and convert it into visible light. The visible rays range from about 4000 to 7000 Angstrom Units (Au). An Au is 1-10,000,000 millimeter or .01 millimicron or 1-100,000,000 of an inch. The rays of radium are about 1-10,000,000,000 of an inch and the cosmic rays are shorter yet and are only partially measured. The long rays have been measured up to 18 miles in length. The Ultra violet rays reaching the earth from the sun are invisible and range from 3000 to 4000 Au. The mercury vapor lamp emits rays ranging from 2000 to 4000 Au. Other sources of Ultra Violet or Fls. rays range from the invisible up thru the visible range. Rays below 3000 Au. at 2950 Au. are harmful and bacteria and tissue destruction reach a peak at 2537 Au. Some minerals Fls. on any rays between 2650 to 3650 such as opal and Willemite. Others are very selective such as Scheelite that Fls. below 2804, Fluorite above 3200, and Brucite and Wernerite at over 3650.

Now for the sources of these rays.

ARGON LAMP—Performance rating 1. Cost 50c—2½ Watts-Clear glass —110 V. AC or about 135 V. DC —Standard Lamp socket—range 3100 Au. up thru the visible—Not enough rays to use satisfactorily with filter—Practically a cold light —Can be used on a 135 V. B-Battery—No effect on eyes or skin except vibration of light which tires eye muscles.

ARGON LAMPS—(bank of 9 in a 6½x6½ inch box) Performance rating 9. Cost Lamps $4.50, sockets 90c. A filter may be placed over the lamps but the thickness of the filter, 5 to 7 MM. stops most of the rays. Filter may be lapped down to about 2MM. for increased efficiency. Will not Fls. red colors or scheelite.

PHOTO-FLOOD—Performance rating 25. Cost 25c—Life 2 hours—110 V. AC—Standard lamp socket —use porcelain keyless socket—

generates considerable heat—Range 3150 to 4000 Au. Can be mounted in a coffee can with a filter over the end. Will not Fls reds or Scheelite.

G. E. STERI-LAMP—Performance rating 30. Cost $5.00—self contained no transformer needed—Standard lamp socket—clear glass—about 8" long and ¾" in diameter—Mercury cold cathode glow type—operates on 110 V. AC or 135 V. DC B-Battery—can be carried in vest pocket—range 2537 Au. plus a small amount of 2950 up to and thru visible—Protect eyes—used with or without filter—Filter should be ground down to 2MM thick. Will Fls. Scheelite. Life 1000 hours.

MERGON NO. 412 UV LAMP—Performance rating 40. Cost $16.00 complete—Glass tubing Argon-Mercury type—Cold light—also made in 6 V. DC and quartz tubing at higher prices—2000 hours conservative useful life.

MAZDA 250W lamp with heat resisting red purple envelope—Performance rating 50. Cost $2.50—110 V. AC—Standard lamp socket—use porcelain keyless socket—generates considerable heat—Made from a high temperature heat lamp with a red-purple envelope instead of clear glass—range 3150 to 4000 Au.—Life 50 hours—No filter required—will not Fls. reds or scheelite. Hard on eyes.

ARC LAMP—Home made—Performance rating 75. Cost 2¼ carbons, 2-300 W heater units $2.00—110 V. AC—or 2¼ carbons 6 V. DC—Cost 50c—carbons can be held in holes punched near the end of a coffee can with a filter over the open end—Has all wave lengths—generates considerable heat—protect eyes—will Fls. scheelite.

G.E. 250W high intensity mercury lamp—Performance rating 100—Cost lamp $10.50 transformer $10.00—110V AC only—clear quartz inner globe and Nonex outer globe clear glass—about 10" long and 1½" in diameter—Range 3000 to 4000 Au.—life 1000 hours—use filter—protect eyes from vibration of light.

G.E. 100W high intensity mercury vapor lamp with outer envelope made of heat resisting red-purple Corning filter glass—Performance rating 150. 110V AC—Cost lamp bulb $11.00, transformer $7.70, special size porcelain socket. 90c—Average life 1000 hours—range 3000 Au. and up—requires 3 minutes to develop complete range—will Fls. all colors except scheelite—protect eyes from vibration of light rays—develops considerable heat.

R & M No. 15 Quartz light—performance rating 175. Cost complete $32.50—Cold argon mercury type—range about 73% 2536 to 2550 Au. and 18% near 3200—used with filter to fit $7.50—Will Fls. scheelite—protect eyes—conservative life 2000 hours.

FLUOROLIGHT NO. 371—Performance rating 200. Cost $48.00 complete—110V cold quartz type with 3' of tightly coiled 9MM quartz tubing—also made for 6V DC—filter to fit $11.75—Principally 2536 Au. up to visible—will Fls. scheelite—protect eyes—2000 hours conservative life.

G.E. Nico Lamp—Performance rating 250. Cost 50" lamp and transformer about $65.00—tube of black

(Continued on P. 285)

COLLECTORS' TALES

By PETER ZODAC

But The Boss Wouldn't Work

Not so long ago a friend and I made a tour of mineral localities through some southern states when the radiator of our car sprang a leak. By the time we reached Johnson City, Tenn., the leak got so bad that we simply had to have the radiator fixed as it was losing water so fast we could go no farther than 30 miles before it would be bone dry. On making inquiries, we learned of a radiator repair shop down one of the side streets and it was soon found.

I went into the office and no one being there waited a few minutes. Still no one appearing, I walked into the shop, which was a good sized one but found no one there either. I yelled, whistled, and stamped my feet but could not even arouse a sight of a man. Finally I was forced to return to the car to report to my friend (it was his car) that no one was around. We just had to have the radiator fixed so believing some one would soon appear we decided to wait a few minutes longer.

About 15 or 20 minutes later, I repeated the trip to the office and shop with similar results. This was repeated again about 20 minutes later and still no one showed up.

On my last return to the car, I stopped to talk to two men, who were leaning, rather lazily, against the hood of a light truck, about 10 feet behind us, and who had been there when we pulled up. The men were facing the shop and had been observing my trips into it.

"Can you tell me if anyone connected with the radiator repair shop is around?" I asked them.

"Ask him," drawled one, pointing lazily to the other," he ought to know. He owns the shop."

"What!" I replied in astonishment, as I slowly backed towards our car. My friend heard the conversation, too, and he yelled to me to get into the car.

"Let's get the h.. .. .. out of here," he snapped. "I don't want that nitwit to work on this car. If he is too d.. .. lazy to walk across the street to learn what you wanted, or even to call to you, I won't have him work on this Cadillac. If he ever took our radiator off it would be a month before he would have it on again."

Letters From A Mineralogist To His Son

(Continued from P. 284)

nickel cobalt glass filters out both visible light and far ultra violet—range 3000 to 4000 Au.—For lighting large areas—Life 2000 hours—protect eyes from light vibration—will not Fls. scheelite—Cold type.

G.E. Uviarc lamp—performance rating 400. Cost lamp and transformer about $100.00. 110V AC—410W—6" mercury arc—clear fused quartz tube—wave length 1850 to 25000 Au. use filter—protect eyes—life 2000 hours—cold type—reflector holds 2—6½" square filters.

Sincerely—Your Dad.

WITH OUR MEMBERS

Ralph K. Ota, formerly of Kobe, Japan, is now residing in Man-to-ho, Manchoukoo. On a recent trip through North China, he collected the following minerals: Borax, Fluorite-massive and in cubes of green and purple, Galena, Hematite, and Mica. Mr. Ota plans to stay two years in Manchoukoo during which time many mines and prospects will be visited and if interesting specimens will be found an article on them will be prepared for ROCKS AND MINERALS.

Mr. and Mrs. Irving Reimann of Buffalo, N. Y., are on a western trip. A card recently received informs us of a stop they made at Magnet Cove, Ark., where aegirite, brookite, limonite after pyrite, magnetite, rutile, wollastonite, etc., etc., were collected. They are planning to continue on to New Mexico and into Mexico in which state and country they will do more collecting.

Mr. Reimann is connected with the Buffalo Museum of Natural Sciences.

C. W. Reitsch, who now resides in El Paso, Texas, states that the country around the city is not nearly so mineralized as around Denver, Colo., the former city of his residence. He reports visiting one of the extinct volcanic craters, west of El Paso, and found large quantities of peridot in more or less compact granular form coated partially or wholly with lava. The crater is enormous in size—something over two miles in diameter and 700 or 800 feet deep.

We are informed by T. Edgar Simmons, of Benomi, Transvaal, South Africa, that Peter Macadam, of the same city, met a tragic death a few months ago. Mr. Macadam may be remembered as the author of an interesting article, "Origin of the Witwatersrand Pebbles" which appeared in the Nov., 1938, issue of ROCKS AND MINERALS.

R. Emmet Doherty, the dashing president of the Rocks and Minerals Association, made a dash to Kennebunkport, Maine, a few nights ago, to witness Booth Tarkington's newest play "Karabash". One of Mr. Doherty's younger brothers, Paul, has a leading part in this play.

George Molnar, a 22 year old member of Perth Amboy, N. J., has not only a very large collection of minerals and fossils but he has travelled extensively in search of them. During a three month period in 1937, he covered about 7,000 miles, on a western trip.

Mr. Molnar's fine collection has attracted considerable interest in his city and many people have examined it. In the May 26, 1939, issue of the *Perth Amboy Evening News*, appeared a very interesting article on his hobby accompanied with two good illustrations.

John Rechholtz, of Brooklyn, N. Y., returned a short time ago from a trip to Montana, Idaho, and Washington, where many gold and silver mines were examined.

Rumor is current in mineralogical circles that Carl Klein, Ex-Police Commissioner of Hudson, N. Y., has fallen heir to a lot of very fine minerals. Be it as it may, genial Carl is no longer to be seen at localities, museums, in fact he even failed to appear at the Convention. Can it be that the collection contains so many specimens he is still unpacking them or are they of so high a quality that localities and museums have now lost all their enchantments for him?

Lester Zeihen, formerly of Butte, Mont., is now connected with the Chile Exploration Co., at Chuquicamata, Chile. We can just bet that the old copper mine of this famous locality will get a thorough going over by Mr. Zeihen and many good specimens will be uncovered.

C. L. C. Bourne, of Georgetown, British Guiana, South America, is spending his vacation on the island of his birth, Barbadoes, British West Indies. While in Barbadoes, Mr. Bourne sent us a clipping from a local paper relative to a find of "fool's gold" on the island. Both the clipping and his letter were sent us in a First Day Cover—1639-1939, Commemorating the Tercentenary of the First Sitting of the General Assembly of Barbadoes—June 26th, 1939. The cover had a complete set of the five new Tercentenary stamps attached to it while a duplicate set of unused stamps were enclosed with the letter.

BIBLIOGRAPHICAL NOTES

Geology and Allied Sciences.

A Thesaurus and a Coordination of English and German Specific and Allied Terms. Part 1—German-English.

By WALTHER HUEBNER

For the first time in the history of geological and mineralogical literature, a comparatively complete nomenclature containing more than 25,000 terms, alphabetically arranged, in the English and German languages, has been compiled and printed. Prof. Walther Huebner, the author, spent 15 years in intensive research work in order that the tremendous task of coordinating the terms of both languages be accomplished.

In the compilation of his dictionary, Prof. Huebner has given wide consideration to the specific American terms of which there are about 5,000. The thesaurus also includes terms used in Canada, Mexico, South America, South Africa, Australia, India, Great Britain, and on the Continent. It deals exhaustively with the following sciences:

Dynamic Geology	Mineralogy
Geomorphology	Physiography
Hydrology (unrestricted sense)	Seismology
Meteorology	Stratigraphy
	Structual Geology

Furthermore, the following subjects have been considered so far as they deal with the field of geology:

Astronomic Geology	Geophysics
Biology	Historical Geology
Botany	Paleobiology
Chemistry	Paleography
Ecology	Paleogeography
Economic Geology	Physics
Geochemistry	Zoology
Geography	

This masterful contribution to geology and mineralogy will prove of invaluable aid to the geologist, mineralogist, mineral collector, mining, engineer, scholar and student. It will contribute towards a better understanding between English and German speaking geologists and mineralogists by facilitating the translation of English and German geological and mineralogical literature.

The German-English text (Part 1), 405 pages, 6x8¾ inches in size, cloth bound, was issued June 29, 1939. Price $7.50. Published by the Veritas Press, Inc., 250 W. 57th St., New York City.

(The English-German text (Part 2) is to appear later in the year).

Sedelmayr's Relacion of 1746: Translated and edited by Ronald L. Ives.

From about 1690 to 1746, Padre Jacobo Sedelmayr, a Jesuit Missionary, traveled over much of northern Mexico and what is now southwestern United States. Even at that early period, there were mines of copper, gold and silver in the area covered by his travels and though knowing nothing about mining, he devotes a number of chapters to them. All those interested in the great Southwest, and especially in its minerals, are deeply indebted to Mr. Ives for this excellent translation of 18 pages of which 2½ are devoted to mines and minerals.

Printed by the Smithsonian Institution, Bureau of American Ethnology, Bulletin 123, pp. 99-117, Washington, D.C., 1939.

Meteorite Lands in Ontario

Some good friend sent to ROCKS AND MINERALS a copy of the July 13, 1939, issue of the Toronto *Globe and Mail* in which appears a long item relative to a meteorite which recently fell in the province. The largest mass found, which fell during the late dusk on Tues., July 11, 1939, and landed in the beet field of Dan Solomon, a farmer living near Dresden, Kent Co., Ontario, Canada, weighed 88 lbs. and was sold for $4.00.

CLUB AND SOCIETY NOTES

Plainfield Mineralogical Society

A field trip to a number of localities in southeastern New York was held Sat., July 22, 1939, by the Plainfield Mineralogical Society of Plainfield, N. J. Localities visited were the Clinchfield, Kinkel, Baylis, and Colgate feldspar quarries at Bedford; Tilly Foster magnetite mine at Tilly Foster; arsenopyrite mine, Shaft 9 aqueduct dump and the Camarco crushed stone quarry (gneiss), all near Carmel. Some very interesting specimens were collected on the trip.

International Geological Congress 18th Session—Gt. Britain—1940

The 18th Session of the International Geological Congress will be held in London from July 31st to August 8th, 1940, with headquarters in the building of the Geological Survey and Museum, Exhibition Road, South Kensington, London, S.W.7, England. A number of papers will be read during the Session while a series of excursions to interesting localities in England, Wales, Scotland and Ireland will be made.

Sessions of the International Geological Congress are held but once every three years and always in different countries. The last session was held in Moscow, Russia, in 1937, where R. E. Myers represented the Rocks and Minerals Association.

A Successful Mineral Show

The Southwest Mineralogists, under the leadership of John Akers, held their annual mineral show in Los Angeles, California on May 5th and 6th.

After the displays were arranged, the members exhibiting took time off for a "pot-luck" supper.

Ribbons were awarded for the best display of crystal groups, cabachons, polished materials, and minerals. The grandsweeps cup went to Mr. Hake for his very large and colorful exhibit. In polished materials, Merle Charleston won first place with his beautifully polished petrified woods; Mr. Hake took second place on his cut and polished geodes from Chocolate Mountains and Mint Canyon. Mr. Lippett, a new exhibitor, was given the ribbon for the third place. In the crystal group, Mr. Hake took the first ribbon; Harold Eales, second; and "Monty" Montgomery, third.

In the cabachon class, Dr. McKibbon, who was exhibiting for the first time, won first rank on his display which was artistically arranged as a bouquet of flowers in a flower pot. "Monty" Montgomery was second, and Mr. Hake rated third.

In the mineral division, Harold Eales was first on his fine variety of well arranged minerals. Mr. Cass took second, and Virginia Eales, a junior member, ranked third.

Mr. Collins, who exhibited for the first time, and Betty Anne Helbach, a junior member, received honorable mention. A well attended and colorful fluorescent exhibit was shown and explained by Harold Eales.

Mr. Ernest Chapman, President of the California Federation of Mineralogical Societies, acted as judge of the exhibits and awarded the prize ribbons.

When closing time came the Southwest Mineralogists of Los Angeles felt that another fine show had ended.

PEARLE ARNOLD.

LARGE TIN MASS FOUND IN AUSTRALIA

For many years an oblong shaped piece of stone, about 2 feet long, has lain on the side of Mount Garnet, according to the Brisbane *Telegraph*. It had been passed by hundreds of prospectors who thought it only a lump of ironstone. Recently, L. C. Lucey, while mustering cattle, chipped a small piece off the stone and had it assayed, with the result that he found it consisted of almost pure tin. The specimen, which is one of the largest tin masses ever found in the district, was brought to town where it tipped the scales at 437 lbs. As a museum specimen it is valued at $500.

Queensland Government Mining Journal April 1939, p. 116.